

# BAUXITE MINING IN THE BOÉ

A CASE STUDY ON LOCAL KNOWLEDGE OF AND OPINIONS ON BAUXITE MINING  
IN MISSIDE BOUSSOURA AND GUILÉJE, GUINEA BISSAU



## RESEARCH REPORT

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Photo cover: the road near Misside Boussoura, December 2010 (Julia van der Hoeven)

## 1. Research background

Daridibó, a local NGO that aims to develop a community based protected area in the Boé, started a project named MISUBAB when became clear that bauxite was discovered in the area and plans were made for a bauxite mine. MISUBAB stands for Mineração Sustentável da Bauxite em Boé, which means Sustainable Bauxite Mining in the Boé, and is subsidized by the European Union and CHIMBO (a Dutch NGO). The project will run for three years from 2010-2012 and aims to give nature and the local population a voice in the decision making process of the national government and the mining company on bauxite mining in the Boé.

It was in this context that the investigator was asked to do a small independent investigation in two villages where works on a road, which will lead to the future mining site, have been started in 2009. The goal of the research was to monitor the impact by the works on the road, but also the give local people a voice in the development of the MISUBAB project. The research in the two villages serves as a pilot study and took place in December 2010.

## 2. Impact of a mine

A mine can have many different kinds of impact on the environment and its population during the different phases of the mining process: exploration, exploitation and mine closure.

Examples of environmental impact are dust, ground water as well as surface water pollution, water scarcity and soil contamination, and noise. These impacts on the environment can be a threat to human health as well.

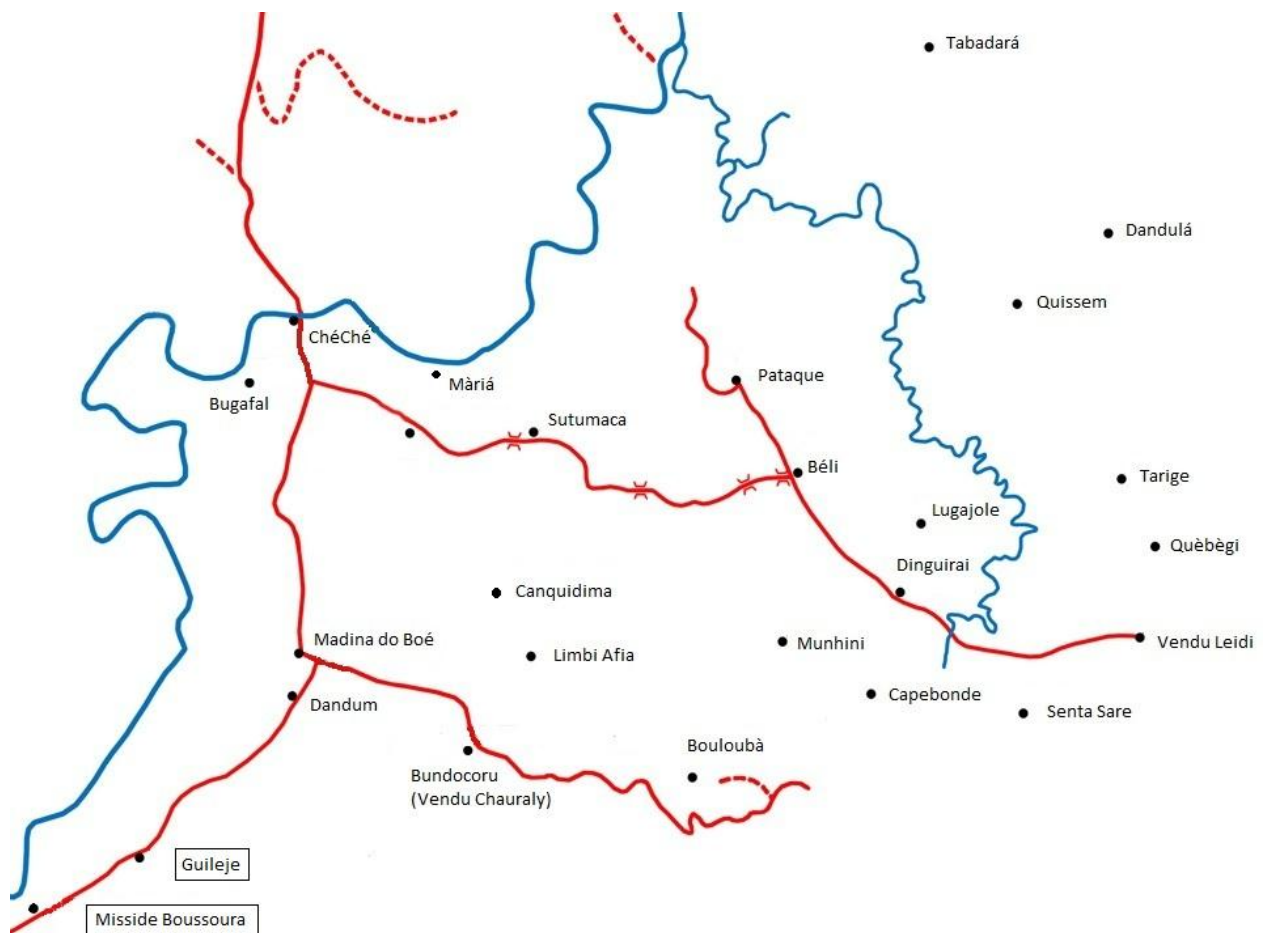
Of course a mine also has great impact on the economy of the region and country. Mining is a booming business in which a lot of money plays a role. Depending on the attitude of the mining company and the government the local population will benefit from the mine (development like schools, health centres etc.). Mines can offer employment in the area.

A mine can have great social impact as well. Conflicts, violence, alcoholism and prostitution are often mentioned problems in mining areas.

This shows that mining issues are complex. Therefore monitoring, empowerment of the local population and sustainable and responsible mining are of great importance.

### 3. Research Design

To get an answer on the research questions mentioned above, a questionnaire was prepared. The investigation took place in two villages in the Boé area in Guinea Bissau: Misside Boussoura and Guileje (see map below).



**Figure 1** Map of the Boé area (Mager 2009)

The research team stayed in each village for three days and two nights. The team was formed by Alpha Iai Keita (driver and overall practical direction), Issaga Sane (introduction in the villages and organization accommodation and meals), Bucari Camara (translation) and Julia van der Hoeven (research). The team prepared the research trip to the villages with a meeting to discuss the practical details as well as the content of the research project.

The two villages were chosen because the works on the road started in that part of the Boé and it was important to monitor the impact.

Before the investigation in each village could be started, the team needed permission of the chief. In each village interviews were held with as many persons as possible. The team tried to speak with both men and women, separately. The team was able to interview 30 persons. Beside the interviews the team tried to learn as much as possible about the situation in the village: education, number of families, social context, sanitation, transport, communication, important public spaces, politics and economy. People were very enthusiastic about the research and the presence of the team.

The interviews were semi-structured, which means that questions were prepared, but the interviews were more like conversations in which the investigator tries to find an answer on the questions on the list. At the beginning of each interview the respondents were explained what the purpose of the interview was and that everything they would tell would be kept confidential and no names would be used in the public reports. They were also assured that wrong answers do not exist, that it is their opinion that matters.

## **4. Context**

The information described below is important to understand the context in which the research took place and in which the results must be seen. The information was obtained during the interviews and during the rest of the stay in the villages, from observations and conversations other than the interviews.

### **4.1 Families and housing**

It is difficult to obtain information about the number of inhabitants in the villages or the number of houses. After a large discussion between the villagers they came up with a number of 33 families in Misside Boussoura. The chief of Guileje does not know how many inhabitants the village has, or how many families live in Guileje. But together with the second chief and another man they started to name all the families, while counting them with little stones for each family. The outcome was that in Guileje live 23 families.

Most families live together in a compound of several houses. Most houses are traditional, round and with a roof made of natural material. But some families also have a bigger house on the compound, rectangular and with an aluminium roof (by pointing at those roofs I was able to show them what aluminium looks like). All walls were made out of mud blocks.

Most men have more than one wife. Every woman has her own room in the big house or her own small house on the compound.

### **4.2 Politics**

The inhabitants of Misside Boussoura elect their chief. The team experienced that another man is responsible when he is not around. This man welcomes the guests and talks to them, but the chief makes the final decision. When the team arrived the chief was not there and had to wait four hours for the chief to arrive and ask him for permission to interview people in his village.

Guileje has two chiefs. Their power is not equal. But the second chief is more than a second in command. The first chief talks to the second chief before decisions are made. When the first chief is not around, the second one welcomes guests and solves problems. The chiefs were chosen because the villagers believe in them.

### **4.3 Transport and communication**

Nobody owns a car in the villages. Sometimes cars come to the village, on market days. Several people own a bicycle and some even a motorcycle. The majority has to walk, sometimes for days, to reach their destination.

On the hill (altitude of 100 meter) next to the village mobile phones can pick up a connection to the GSM network(Orange). People with a phone can make their phone calls from the top. A small shop in Misside Boussoura sells Orange cards. There is no electricity in the village. Phones have to be recharged by making a connection with a wire between the charger and dry batteries. Nobody owns a television, and there are no newspapers or mail services. The radio is the most important communication resource in the Boé area. Messages and news are received and send by radio. The radios they use run on dry batteries, and most people do own a radio.

In Guileje mobile phones cannot pick up a GSM signal like in Misside Boussoura. Information and news must pass from person to person or by radio. Guileje is not very far from the border (about 20 km) with Guinea Conakry and there is a lot of contact with people from the neighbouring country. The inhabitants of Guileje use money from Guinea Conakry more than they use money from Guinea Bissau. Every Wednesday it is market day in the village. People from Guileje, but also from other villages in the region, sell food and goods. Such markets are good opportunities to exchange news and information. It also gives people the opportunity for transport, because cars are coming to the village.

#### 4.4 Sanitation and healthcare

Each compound has a bathroom, which serves as a bathing place and toilet. The bathroom is a circle with a diameter of more or less two meters. A bamboo or reed screen is placed around the place. In the middle you will find a hole that serves as a toilet.



Photo 1 Sanitation space



Photo 2 Typical well in Misside Boussoura

Water is taken from different wells in the village. The respondents told that Misside Boussoura has four wells, and Guileje six.

In both villages is a lack of health care. In Misside Boussoura is an accommodation for a small health centre, but it is empty. There is no doctor or nurse, and there are no medicines. Misside Boussoura has a traditional medicine man. In both villages they use traditional remedies. If necessary, people have to go to health centres in Quebo, Gabu, Guinea Conakry, Conta Bane, Bissau, Bafata or Dandum.

#### **4.5 Social structure and important public spaces**

All respondents were positive about the situation and the social relationships in the village. There is a lot of contact with other villages as well, to organize parties and ceremonies, for help and trade. In Guileje there is almost daily contact with Guinea Conakry. Marriages with people from the neighbouring country are common.

Near the chiefs house is a public area. People gather underneath a roof made of leaves, to chat and to hang out. This is also the place where the guests are welcomed and where meetings are held. The mosque is also an important public place. Not only because of prayer, but also because of ceremonies, parties and meetings.

In Guileje the central meeting point is in front of the chief's house. Beneath a big tree a little 'terrace' is made with big wooden chairs. Guests are received there. The village has a mosque and a Koran school, like Misside Boussoura. The market place along the road is also an important public space.

#### **4.6 Religion and education**

All the inhabitants are Muslim. The men go to the mosque very often. Women do not know very much about religion. Only elder women are allowed to go to the mosque. Most children only go to the Koran school. Currently there is no regular school in Misside Boussoura, or in Guileje. The problem is the lack of teachers. Parents could send their children to other villages for primary education and for secondary education they should send them to Gabu, Bissau or Guinea Conakry.



**Photo 3 Koran school in Misside Boussoura**



#### 4.7 Landownership

Women do not own land, but work on the land of their husbands. All the male respondents in Misside Boussoura own land. One person leases an extra piece of land to cultivate rice. The land ownership in Guileje seems to be very different. Only two male respondents own land. The majority leases land in Sintcham Mussa, a nearby village, and two men lease land in Guinea Conakry.

About half of the respondents told that the decisions about land use are made by the chief; the other half says they decide themselves or a family member. In that case they were talking about inherited land.

In Guileje the situation differs from the situation in Misside Boussoura. As described above, in Guileje most people lease land from someone else. Mostly this is arranged by the chief and in some cases people go directly to the owner of the land.

In Misside Boussoura the land is used only by inhabitants of the village, in Guileje however many people from outside the village use land, mainly from Guinea Conakry.

#### 4.8 Daily life in the villages

All the respondents are farmers. Some have other activities or professions beside their tasks as a farmer. The team spoke to a Koran teacher, a man who owns a shop, a tailor and a constructor. The women work with their husbands on the fields or in the orchards beside their tasks in the household like washing, cooking, cleaning, maintenance of the mud walls and cooking palm fruits (to make palm oil). The respondents own chicken, goats and sheep. The farmers grow rice, manioc, millet, peanuts and corn. In the orchards you find lots of cashew. In the village people own fruit trees like orange, banana and mango. In Guileje people explained that the definition of a farmer in the area is: someone who



Photo 4 Man with palm fruits in Guileje

cultivates rice, corn, millet and sometimes peanuts. These crops grow on the same field. The majority of the respondents cultivate rice only for their own use, not for trade. Cashew is the main trade product. Banana, orange and peanuts are often partly used for trade as well. Only one of the respondents sells chilli and two sell millet. Some women prepare meals to sell on the weekly market.

## 5. Life with a bauxite mine

### 5.1 Meaning of 'environment'

During the interview the respondents were asked about the meaning of environment and what it means to them. In this way the team tried to learn more about their ideas about environment and the way in which they depend upon it.

Everyone thinks that the environment is very important. They link it immediately to their fields and orchards, which they need to survive. Environment means survival.

The respondents were asked what they get from nature (food and other products/materials). Beside the products they get from their work as farmers they also collect ingredients for traditional medicines, material for their houses, honey and fruits. Examples of fruits are: the palm fruit for the oil, *faroba*, *nere*, *canci* and *velodo*. Almost everything they get from the woods is for own use, except for palm oil, which is often partly for sale. The part of the harvest from their fields and orchards that they do not use themselves is sold.

Fishing is a common activity in the villages. The fishermen often sell a part of their catch. Three of the respondents (men) told they use to hunt in the area. Animals they hunt for are: gazelles, buffalos, porcupine, *bolere/frintamba* (Common grey Duiker), *togere*, *boca branco/coba* (Roan antelope), *SimSim* (Waterbuck) and *mutuwal*.

Water is an important subject for the people in both villages. Water is taken from wells in the villages, but respondents told us that they dry up between the end of January and March, until the raining season start again in May or June. When the wells are empty the inhabitants have to get water from the river, about 3 km from Misside Boussoura and 5 km from Guileje. The crops are not in danger because of water problems, since farmers sow in the raining season.

People depend on nature, it gives them food and materials, but nature can also cause them harm. The respondents suffer damage from animals. The *farfana* was the most mentioned animal. It was said to cause harm to the rice fields, because the animal 'cuts' the rice. Other animals that cause damage to the fields or orchards, mentioned by respondents, are: wild pigs, black colobus, baboons red monkeys, chimpanzees, insects, birds, and *gafanhotos*.

To learn more about what nature means to the respondents they were asked about the connection between nature and their religion. This was a very difficult question for people to understand, so we started asking what their religion tells them about the environment and nature. Women couldn't answer the question because most of them do not go to the mosque (yet). Male respondents explained that the imam tells them not to burn their fields after use and to take care of nature, because it is important. In Guileje the imam also advises to not kill animals if it is not

necessary, and not to kill protected animals. They do not kill pigs, because the Islam forbids them to eat pork.

## **5.2 Bauxite mining**

None of the respondents knows what a mine is, and only one person knows what bauxite is. He knows that it is used to make aluminium, and he points at the roof. He knows it because he has been to Guinea Conakry.

Only two men have seen a bauxite mine in Guinea Conakry, but do not know exactly what it is or what the bauxite is used for.

Before continuing the interview the respondents were given a short explanation about bauxite mining, just the basics. Extensive explanation was not given to avoid biases.

Because women are not invited to important meetings, all the information they get is through their husbands. But not all husbands tell everything to their wives.

Representatives from the government have been to Misside Boussoura, as well as Guileje. They explained the people of the village about the importance of having identity papers if they want to get a job in the mine.

MISUBAB also visited the village. Only three respondents knew about the purpose of the visit. They remembered that the representatives of the MISUBAB project told them to ask for compensation for the damaged fields and orchards. In Guileje people also told us that MISUBAB visited the village. They came to invite them for a meeting in Beli. The chief went to Beli to attend. The chief always spreads the information of such meeting in the village. Only three men knew what the meeting in Beli had been about. They remembered that a mining company should compensate people for damage and that according to MISUBAB it is very important to form a committee to represent the people of the Boé area.

Important to note is that at the moment of the research neither in Guilege nor in Misside Boussoura people could receive the local radio of Beli. This could partly explain the lack of knowledge about the MISUBAB project.

### 5.3 Changes since works on the road

*This paragraph is only about Misside Boussoura. In Guileje work on the road had not yet started. Only some men came for measurements.*

Respondents in Misside Boussoura were asked if something changed about the overall situation in the village because of the works on the road. A third of the respondents said nothing changed. The majority noticed a change in the village. For most of them this means a positive change: the road. Only three respondents mentioned the destroyed fields at this point of the conversation (some of them mentioned it later). After the general question the interview continued on this subject with more specific questions and more details were revealed.

When we asked specifically about impact on the environment two respondents told that animals were killed during the works on the road, specifically baboons. Orchards were destroyed to make the road, people lost their cashew trees. Cashew is very important for trade. Before the works started no one came to talk to the owners of the orchards, they were not prepared.

The works and the damage did not cause any tensions in the village or with the workers. They build a good relationship with the men who came to work on the road; they respected the villagers and came to play with the boys. The respondent with a small shop also earned some money because of their presence. The respondents do not blame the workers because of the damage, it is the government to blame, they say. The situation did not change anything about the power relationships in the village.

The village copes with a lot of health problems. This situation did not change because of the works on the road. The works started in the raining season, so there was no dust nuisance.

According to people of the MISUBAB project some people mentioned destroyed wells earlier. Strangely no one mentioned it during the interviews.

*The road is not finished yet. When the research team was in the village the works had been stopped and the road was partly overgrown again.*



**Photo 5, 6, 7: the road in October 2008, January 2009 and December 2010**

#### **5.4 Future**

*Respondents were asked about their views on the future, with a bauxite mine in the area. Because most respondents did not know what a bauxite mine is, it was very difficult for them to opinion about the impact of a mine. What people knew was based on information they got from MISUBAB, or from Guinea Conakry.*

Most respondents assume that the mine will have a negative impact on the environment, but they cannot explain why. Three respondents are concerned about water contamination. Two respondents are convinced that all negative impact can be prevented by a good cooperation, they are very confident that the mining company will do everything to prevent negative impact on the environment. In Guileje people were very preoccupied because of the dust from the mine. They know it's bad for their land, plants and animals. Only one person learned this at the MISBAB meeting. The frequent contact with people from Guinea Conakry and their journeys to the neighbouring country might explain this knowledge.

The majority of the respondents is worried about their crops. They worry out of insecurity; not knowing what will happen or can happen. They do not know exactly which land the mining company will use and which field or orchards will disappear. In Misside Boussoura they already experienced the damage to their orchards and in Guileje they all know the story of their neighbours. The majority of the respondent thinks that the mine will not change anything about the social relations in the village and between the different villages in the area. Some even think it will be better, because of the development and the jobs that the mine will bring to the area. Only two persons doubt this. They think not everyone will have a job and people will get jealous, which will destroy relationships. The respondents are mainly positive about the possible immigration of people

coming from outside the area to work in the mine. 'If the immigrants are good people, everything will be fine', they say.

The inhabitants of Misside Boussoura and Guileje are confident that a mine in the area will bring jobs, transport, better communication resources and development.

During the conversation the subject 'impact on health' came up as well. Fifty per cent of the respondents is not worried about an impact on health of the mine. A respondent thinks it will have an impact, but on the people living closer to the mine. Another respondent worries about diseases immigrants might bring to the area. In Guileje the same people that mentioned possible problems with dust for their crops before, are also worried about dust in relation to health. Besides impact on their fields, plants and animals they think it might harm people as well.

To learn more about the communication in the village and between the villages in the area the respondents were asked if they talk with people from their village and from other villages about the mining project. This made clear that the majority does not talk about it at all. But when they were asked they seemed reticent, like they were not supposed to talk about it. It is clear that there is a lack of communication. Some men went to the meetings with MISUBAB, but afterwards people do not spread or discuss the information that has been given.

#### *Final conclusion of the respondents about the mine*

People in both villages have their doubts and worries, because they do not know exactly what to expect from a mine in the area. But if it brings them development they will welcome the project. They hope for jobs, transport and better communication. In Guileje we found people more positive than in Misside Boussoura, maybe because of the bad experience in that village with the damage to their orchards. In Guileje people are also hoping for school and hospitals in the area.

## 6. Conclusions and recommendations

It is clear that the villages could use development, specifically improved health care, education and transport. People are very poor and hope to get a job with the mining company. It is because of these reasons that the respondents are positive about the mine.

But it is not only positivism that was found in the villages. People are worried and doubtful. They need information on the subject. Because how can they opinion about something important if they do not know what bauxite mining is. If they want to be a part of the dialogue with the other stakeholders they need to be prepared. The main concern of the respondents is damage to their fields and orchards.

The research made clear that the little knowledge respondents had about bauxite mining comes from Guinea Conakry. Therefore the planned working visit to the neighbouring country could be very useful to diminish the lack of knowledge on the impact of a bauxite mine. In general the capacity strengthening project of MISUBAB is of great importance. MISUBAB should not only focus on the chiefs, because information is not very easily shared. The radio is an important tool for communication. As soon as the reach of radio Beli is increased, people will be able to receive the radio broadcasts of MISUBAB. It is important to reach as many people as possible and ensure to reach the women in the villages as well.

This research also made clear that people highly depend on nature and water in the environment. Great care should be taken to preserve its quality. Monitoring of water quality and availability is very important during all stages of the mining process.

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## Annex

### Questionnaire

- **Introduction**

1. **General question**

- With whom do you live here?
- How many children do you have?
- Do you live with your parents also?
- With uncles and aunts?
- With how many women do you live?

2. **Daily life and work**

- a) How is your daily life? Can you describe a normal day?
- b) Do you have/own animals?
- c) Do you practice agriculture (orchards and fields)?
- d) Which part of the things you grow on your fields/orchards are for own use and which part is for selling?
- e) Do you own any fields?
- f) Who makes decisions about the land use in the village?
- g) Are there people from other regions/countries who use the fields over here?
- h) Education: did you go to school? Did you have any other form of education? Are your kids going to school?
- i) Health: where is closest hospital/health centre? Where do you go if you are ill? How long is the journey to get there?

3. **Meaning environment/nature**

What means the nature/environment to you? (Ask about different aspect, like medicines, materials, food, hunting, fishing, water etc.) Do you depend upon nature? How?

4. **Bauxite mining**

- a) What is bauxite mining in your opinion?
- b) Have there been people to your village to tell you about the plans for the Boé?  
How did you experience it? What did they told you?

5. **Overall situation in the village**

- a) How was the situation here before the project started?
- b) Has there been a lot of contact with people from other areas?
- c) Have there been any changes for you or for the village since the works on the road started?

6. **Positive and negative impacts of the works on the road**

- a) Have there been changes in relation to the nature and the animals? What kind of changes?
- b) Did your cultivation change? What?
- c) Have there been any changes between the social relationships in the villages and between the villages? What kind of changes?
- d) Has something changed about the economic situation (*trading/products*)? How?
- e) Are there any health problems since the work on the road in the area? Yes: which problems? Has someone in your family deceased last year? What was the cause?
- f) Did the start of the works on the road cause any changes of power relations inside the village or between the villages?

- g) Did anyone asked you about your fields or orchards?
- h) Migration: did people from outside came to live here lately?

**7. Future perspectives**

- a) Do you think the mining activities will have an impact on nature and animals?
- b) Are you concerned about the agriculture? In which way/why?
- c) Do you think that the mining project will change social relationships between the villagers and between the villages? And what is your opinion about migration?
- d) Do you think that the mining project will influence the local economic situation?
- e) Do you think that the mining project will have any effect on your health? In which way?
- f) Do you think that the mining project will cause any changes in power of people or between the villages, politically?
- g) Do you talk about the mine with other people, or do people in the village talk about the subject? And what about conversations between the villages?
- h) What is your final opinion about the mine coming (positive/neutral/negative)?